

REMARKS

Claims 1-5, 10-22 are pending in the present application. Claim 21 is withdrawn from consideration. Claims 1-5, 10-20 and 22 are rejected. Claims 1, 20 and 22 are herein amended. No new matter has been presented.

Claim Rejections - 35 U.S.C. §103(a)

Claims 1-20 remain rejected under 35 U.S.C. §103(a) as being unpatentable over EP1152036 to Kanda et al. in view of U.S. Patent No. 5,173,393 to Sezi et al.

The Examiner asserts that the only differences between the claims and Kanda et al. is that Kanda et al. does not disclose applying a first surfactant on the resist pattern to be thickened; Kanda et al. does not disclose that the resist pattern is heated after applying the surfactant; Kanda et al. does not disclose that the surfactant composition includes a solvent that does not dissolve the resist pattern to be thickened, and that the solvent is water (claims 4-5); Kanda et al. does not disclose that the surfactant composition is a metal-free surfactant such as a non-ionic surfactant and is selected from the group recited), and Kanda et al. does not disclose that the ArF resist material is selected from the group recited in claim 19.

The Examiner concludes that it would have been obvious to a skilled artisan to modify Kanda et al. by employing the process of treating the resist pattern to be thickened with a surfactant solution as suggested by Sezi et al. because Sezi et al., in column 7, lines 3-8 and in column 8, lines 38-55 discloses that the resultant photoresist structure has an increased etch resistance and is therefore suitable to be used as an etch resistant mask. The Examiner further

concludes that it would have been obvious to a skilled artisan to modify Kanda et al. by employing the resist pattern material suggested by Sezi et al. because Sezi et al., in column 4, lines 44-55, discloses that the resist material used for forming the photoresist structure includes reactable groups such as anhydrides that do not exhibit an increased absorption of DUV light.

Applicants herein amend the claims to clarify the invention. Thereafter, Applicants disagree with the rejection and submit that the rejection is overcome by the present amendments.

Claims 1, 20 and 22 now recite a process for forming a resist pattern, comprising forming a resist pattern to be thickened on an underlying object and applying a surfactant composition containing at least a first surfactant on the resist pattern to be thickened.

To illustrate use of a surfactant, the Examiner relies on Sezi et al. in column 6, lines 60-68, in column 8, lines 9-11, which discloses that a surfactant solution that is metal-free, and is non-ionic, such as alcohol is applied on the photoresist structure.

However, as herein amended, the non-ionic surfactant is at least one selected from the group consisting of polyoxyethylene-polyoxypropylene condensates, polyoxyalkylene ethers, polyoxyethylene alkyl ethers, polyoxyethylene derivatives, sorbitan fatty acid esters, glycerol fatty acid esters, primary alcohol ethoxylates, phenol ethoxylates, alkoxylates, fatty acid esters, amides, and ethylene diamines. Applicants note that alcohols are no longer included in the claimed Markush group of possible surfactants.

Therefore, at least this limitation is not met by the cited references, alone or in combination.

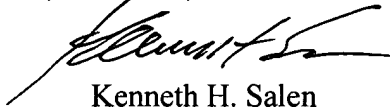
In view of the aforementioned amendments and accompanying remarks, Applicants submit that the claims, as herein amended, are in condition for allowance. Applicants request such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney to arrange for an interview to expedite the disposition of this case.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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